

AMENDMENTS TO THE CLAIMS

Listing of claims

This listing of claims will replace all prior versions of claims and listings of claims in the application:

1. (Currently amended) Apparatus for use in a fluid processing workstation having a plurality of pumps, each pump configured to operate a membrane pump cassette, the apparatus comprising:
a) a plurality of membrane pump cassettes, ~~for use respectively with~~ each membrane pump cassette for coupling with one of the plurality of pumps, each membrane cassette comprising:

a first pump chamber at least partially comprising a membrane for pumping fluid under control of its respective pump; and a first fluid inlet port in selective fluid communication with the first pump chamber wherein fluid enters the first pump chamber when its respective pump applies negative pressure to the first pump chamber membrane;

b) an inlet tube; and

c) distribution tubing that connects the inlet tube to the first fluid inlet port of each of the pump cassettes such that the first pump chambers of the pump cassettes can be coupled to pump fluid from a common fluid source via the inlet tube and distribution tubing; and

d) a multi-port coupling in the distribution tubing such that the distribution tubing extends away from a first and second port of the coupling, the inlet tube is connected to a third port of the coupling, and the first fluid inlet port of a middle one of the pump cassettes is coupled to a fourth port of the coupling.

2. (Currently amended) Apparatus according to claim 1, wherein the inlet tube is centrally attached along the distribution tubing and the plurality of membrane pump cassettes are symmetrically attached connected to the distribution tubing with respect to the port at which the inlet tube attachment is connected to the multi-port coupling.

3. (Currently amended) Apparatus according to claim 2, wherein the points at which attachments of the plurality of membrane pump cassettes are connected to the distribution tubing are equally spaced apart along the distribution tubing.
4. (Previously Presented) Apparatus according to claim 1, further comprising a plurality of incubation bags, each bag being attached to an outlet port on a respective one of the membrane pump cassettes.
5. (Original) Apparatus according to claim 4, further comprising a bar code label on each of the incubation bags.
6. (Original) Apparatus according to claim 1, further comprising a break-away closure on the inlet tube.
7. (Previously Presented) Apparatus according to claim 1, wherein each membrane pump cassette includes a second fluid inlet port with a second fluid inlet tube attached thereto and further including a break-away closure on the second fluid inlet tube.
8. (Canceled)
9. (Currently amended) A membrane pump cassette bank comprising:
 - a) an odd number of membrane pump cassettes, each membrane pump cassette for use with one of a plurality of pumps, each pump configured to operate a membrane pump cassette, each membrane pump cassette comprising: including a working solution pump chamber at least partially comprising a membrane for pumping working solution under control of a respective pump; and a working solution inlet port selectively coupled to the working solution pump chamber wherein working solution enters the working solution pump chamber when its respective pump applies negative pressure to the first working solution pump chamber membrane;

b) a working solution inlet tube; and

c) distribution tubing connected between the working solution inlet tube and the working solution inlet ports of the odd number of membrane pump cassettes such that the working solution pump chambers of the membrane pump cassettes can be coupled to pump working solution from a common working solution source via the inlet tube and distribution tubing, wherein:

the working solution inlet tube joins the distribution tubing through a first port of a multi-port coupling,

a middle one of the membrane pump cassettes joins the distribution tubing through a second port of the multi-port coupling, and

an equal number of the membrane pump cassettes are connected to each of two branches of the distribution tubing, the first branch being connected to a third port and the second branch being connected to a fourth port of the multi-port coupling, proximate to a junction between the distribution tubing and a middle one of the membrane pump cassettes such that connected to the distribution tubing on either side of the junction, are an equal number of the membrane pump cassettes

10. (Currently amended) The membrane pump cassette bank of claim 9 wherein the membrane pump cassettes connected to one branch of the distribution tubing ~~on one side of the junction~~ are spaced ~~from the junction~~ at given distances from the ~~junction~~ multi-port coupling, and wherein at those given distances from the multi-port coupling, an equal number of the membrane pump cassettes are connected to another branch of the distribution tubing ~~on the other side of the junction~~.

11. (Previously Presented) The pump cassette bank of claim 9 further comprising a plurality of incubation bags, each bag being attached to an outlet port on a respective one of the membrane pump cassettes.

12. (Previously Presented) The membrane pump cassette bank of claim 10 further comprising a bar code label on each of the incubation bags.

13. (Previously Presented) The membrane pump cassette bank of claim 9 further comprising a break-away closure on the working solution inlet tube.

14. (Previously Presented) The membrane pump cassette bank of claim 9 wherein each membrane pump cassette includes a second fluid inlet port with a second fluid inlet tube attached thereto and further including a break-away closure on the second fluid inlet tube.

15. (Canceled)

16. (Currently amended) A membrane pump cassette ~~ban~~ bank comprising:
a plurality of membrane pump cassettes, each membrane pump cassette for use
~~respectively with one of~~ a plurality of pumps, each pump configured to operate a membrane
pump cassette, each membrane pump cassette comprising:

- a) a first inlet port and an associated first pump chamber;
- b) a second inlet port and an associated second pump chamber, wherein each of the first
pump chamber and second pump chamber further comprising a membrane for pumping
fluid, the membrane under control of its respective the pump with which the membrane
pump cassette is to be used, wherein fluid enters the first pump chamber and second
pump chamber when its respective the pump applies negative pressure to the first pump
chamber membrane and the second pump chamber membrane respectively;
- c) an air vent and associated hydrophobic filter, and
- d) an outlet port;

the membrane pump cassette bank further comprising:

- a working solution inlet tube; and
- distribution tubing connected between the working solution inlet tube and the first

inlet ~~ports~~ port of each of the plurality of membrane pump cassettes, such that the first pump chambers of the membrane pump cassettes can be coupled to pump working solution from a common working solution source via the inlet tube and distribution tubing, wherein the working solution inlet tube is ~~centrally connected by a first port of a multi-port coupling to a first and second branch of the distribution tubing through a second and third port, respectively, of the multi-port coupling, such that an equal number of the membrane pump cassettes are connected to each branch of the distribution tubing, on either side of a junction between the distribution tubing and the working solution inlet tube are an equal number of the membrane pump cassettes and wherein the first inlet port of a middle one of the membrane pump cassettes is coupled to a fourth port of the multi-port coupling.~~

17. (Currently amended) The membrane pump cassette bank of claim 16 wherein the membrane pump cassettes connected to the first branch of the distribution tubing ~~on one side of the junction~~ are spaced at given distances from the junction multi-port coupling, ~~given distances from the junction~~ and wherein ~~at those given distances~~ the membrane pump cassettes are connected to the second branch of the distribution tubing ~~on the other side of~~ are so connected at said given distances from the junction the multi-port coupling.

18. (Canceled)

19. (Previously Presented) The membrane pump cassette bank of claim 18 further comprising a plurality of incubation bags, each bag being attached to an outlet port on a respective one of the pump cassettes.

20. (Previously Presented) The membrane pump cassette bank of claim 19 further comprising a bar code label on each of the incubation bags.

21. (Previously Presented) The membrane pump cassette bank of claim 18 further comprising a break-away closure on the working solution inlet tube.

22. (Previously Presented) The membrane pump cassette bank of claim 18 further comprising a second fluid inlet tube attached the second inlet port on each of the pump cassettes and further including a break-away closure on each of the second fluid inlet tubes.

23. (Currently amended) A kit comprising:

a plurality of membrane pump cassettes, each membrane pump cassette comprising:
a first pump chamber comprising a membrane for pumping fluid under control of a respective pump to which the membrane pump cassette can be coupled; and
a first fluid inlet port in selective fluid communication with the first pump chamber, wherein the first fluid inlet port allowing fluid enters to enter the first pump chamber when its respective the pump to which it is coupled applies negative pressure to the first pump chamber membrane; and

an inlet tube and associated distribution tubing for connecting the inlet tube to the first fluid inlet port of each of the pump cassettes such that the first pump chambers of the pump cassettes can be coupled to pump fluid from a common fluid source via the inlet tube and distribution tubing; and

a multi-port coupling in the distribution tubing such that a first branch of the distribution tubing extends from a first port of the coupling, and a second branch of the distribution tubing extends from a second port of the coupling, the first fluid inlet tube is connected to a third port of the coupling and the first fluid inlet port of a middle one of the pump cassettes is coupled to a fourth port of the coupling.

24. (Original) A kit according to claim 23, further comprising:

a plurality of incubation bags for attachment respectively to an outlet port of each of the pump cassettes.

25. (Canceled)

26. (Currently amended) Apparatus for use in a fluid processing workstation, the apparatus comprising:

~~a plurality of membrane pump cassettes, each membrane pump cassette for coupling to for use respectively with a respective pump of a plurality of pumps, each membrane pump cassette comprising:~~

a) a first pump chamber at least partially comprising a membrane for pumping fluid under control of its respective the pump to which the membrane pump cassette is to be coupled; and

b) a first fluid inlet port in selective fluid communication with the first pump chamber wherein fluid enters the first pump chamber when its respective the pump to which the membrane pump cassette is to be coupled applies negative pressure to the first pump chamber membrane;

the apparatus further comprising:

an inlet tube; and

distribution tubing that connects the inlet tube to the first fluid inlet port of each of the pump cassettes such that the first pump chambers of the pump cassettes can be coupled to pump fluid from a common fluid source via the inlet tube and distribution tubing; wherein

the distribution tubing extends in two segments from a multi-port coupling with the inlet tube; and

an equal number of membrane pump cassettes is positioned along each segment of the distribution tubing.

27. (Currently amended) The apparatus of claim 26 ~~further comprising~~ wherein fluid exits the first pump chamber ~~of the membrane pump cassette when its respective the pump to which the membrane pump cassette is to be coupled applies positive pressure to the first pump chamber membrane of said first pump chamber.~~